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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,666	07/28/2003	Jin Ug Kim	U 014734-9	4402

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26 West 61st Street
New York, NY 10023

EXAMINER

KERSHTEYN, IGOR

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/628,666

Applicant(s)

KIM, JIN UG

Examiner

Igor Kershteyn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 24-30 is/are rejected.
- 7) ☒ Claim(s) 17-23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/28/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bianchi (6,095,768).

In figures 1-10, Bianchi teaches a hermetic reciprocating compressor 12, comprising a rotating shaft 46 provided with an eccentric part 54 at an upper portion therein, a drive unit 14 to rotate the rotating shaft 46; a frame 24 having a shaft bore (not numbered) to receive the rotating shaft 46 therein, with a first annular bearing seat 56 formed around an upper edge of the shaft bore; a cylinder block 66 provided at an upper portion of the frame 24 to define a compression chamber therein a piston 68 received in the compression chamber to perform a rectilinear reciprocation in the compression chamber so as to compress a refrigerant in response to a rotation of the eccentric part 54 of the rotating shaft 46; and a first radial bearing 62 seated in the first annular bearing seat 56 of the frame 24 to sustain both axial loads of the rotating shaft 46 and horizontal loads acting in the rotating shaft 46 due to the rectilinear reciprocation of the piston 68, the first radial bearing 62 comprising a first outer race 90 supported by the frame 24 and a first inner race 86 set around the rotating shaft 46.

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Claims 1, 3, 4, 7, 8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawai et al. (5,205,723).

In figure 1, Kawai et al. teach a hermetic reciprocating compressor 21, comprising a rotating shaft 26 provided with an eccentric part 29 at an upper portion therein, a drive unit 22 to rotate the rotating shaft 26; a frame 32 having a shaft bore (not numbered) to receive the rotating shaft 26 therein, with a first annular bearing seat 34 formed around an upper edge of the shaft bore; a cylinder block 32 provided at an upper portion of the frame 32 to define a compression chamber therein a piston 31 received in the compression chamber to perform a rectilinear reciprocation in the compression chamber so as to compress a refrigerant in response to a rotation of the eccentric part 29 of the rotating shaft 26; and a first radial bearing 33 seated in the first annular bearing seat 34 of the frame 32 to sustain both axial loads of the rotating shaft 26 and horizontal loads acting in the rotating shaft 26 due to the rectilinear reciprocation of the piston 31, the first radial bearing 33 comprising a first outer race 33a supported by the frame 32 and a first inner race (not numbered) set around the rotating shaft 26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 6, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai et al. (5,205,723) in view of Nitsche et al. (4,836,755).

Kawai et al. teach all the claimed subject matter except that they don't teach the at least one first spring washer is provided at a portion above or under the first radial bearing.

Nitsche et al. in figure 4, teaches reciprocal piston compressor having shaft 18, a frame 12, a shaft bearing 12 with at least one first spring washer is provided at a portion above the first radial bearing.

Note. The fact that Nitsche et al. does not show the spring provided below the radial bearing does not make claim 11 patentable. See MPEP 2144.04 [R-1]

Legal Precedent as Source of Supporting Rationale

VI. REVERSAL, DUPLICATION, OR REAR-RANGEMENT OF PARTS

A. Reversal of Parts

In re Gazda, 219 F.2d 449, 104 USPQ 400 (CCPA 1955) (Prior art disclosed a clock fixed to the stationary steering wheel column of an automobile while the gear for winding the clock moves with steering wheel; mere reversal of such movement, so the clock moves with wheel, was held to be an obvious expedient.).

Since Kawai et al. and Nitsche et al. are analogous art because they are from the same field of endeavor, that is the reciprocal compressor art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the bearing arrangement of Kawai et al. with the spring as taught by Nitsche et al. for the purpose of preloading the bearing.

Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bianchi (6,095,768) in view of Nitsche et al. (4,836,755).

Bianchi teaches all the claimed subject matter except that he doesn't teach the second radial bearing comprising a second outer race supported by the frame and a second inner race set around the rotating shaft.

Nitsche et al. in figures 1 and 5, teaches a reciprocal compressor having a ball bearing 36 having (inherently) an outer race supported by the frame and an inner race set around the rotating shaft.

Since Bianchi and Nitsche et al. are analogous art because they are from the same field of endeavor, that is the reciprocal compressor art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the friction bearing of Bianchi with the ball bearing as taught by Nitsche et al. for the purpose of reducing friction.

Claims 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bianchi (6,095,768) in view of Nitsche et al. (4,836,755).

Bianchi teaches all the claimed subject matter except that he doesn't teach a third radial bearing set in a junction between an outer surface of the eccentric shaft and an inner surface of the shaft guide of the connecting rod.

Nitsche et al. in figures 1 and 5, teaches a reciprocal compressor having a third radial bearing 48 set in a junction between an outer surface of the eccentric shaft 46 and an inner surface 50 of the shaft guide of the connecting rod 52.

Since Bianchi and Nitsche et al. are analogous art because they are from the same field of endeavor, that is the reciprocal compressor art, it would have been

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obvious at the time the invention was made to a person having ordinary skill in the art to modify the compressor of Bianchi with the a third radial bearing set in a junction between an outer surface of the eccentric shaft and an inner surface of the shaft guide of the connecting rod as taught by Nitsche et al. for the purpose of reducing friction.

Allowable Subject Matter

Claims 17-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of three patents.

Hadley (2,463,766) is cited to show a reciprocating compressor having a self-aligned bearing between a connecting rod and a crank shaft.

Middleton et al. (4,718,830) is cited to show a reciprocating compressor having a bearing arrangement between a frame of the compressor and a crank shaft but fail to teach a radial bearing sustaining both axial and horizontal loads.

Montgomery (6,357,338) is cited to show a reciprocating compressor having a bearing arrangement between a connecting rod and a crank shaft, and a bearing arrangement between a frame and the crank shaft but fails to teach the compressor being a hermetic compressor and refrigerant as a pressure media.

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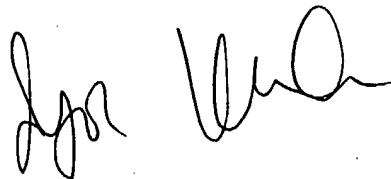
Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is (703) 308 8317. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

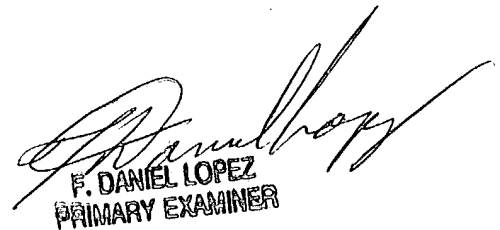
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on (703) 308 1044. The fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK
October 29, 2004



Igor Kershteyn
Patent examiner.
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F. DANIEL LOPEZ
PRIMARY EXAMINER